CLAIMS

1. A composition comprising lin^- cells that are characterized as expressing CD31, CD34 and CD105, and not expressing c-kit, wherein the composition comprises fewer than 20% of lineage committed cells.

2. The composition of claim 1, wherein the cells express at least one of von Willebrand factor, Flk-1, and Tie-2.

3. The composition of claim 1, wherein the cells do not express B-H1 and mB-1.

4. The composition of claim 1, wherein the composition comprises fewer than 10% of lineage committed cells.

5. The composition of claim 1, wherein the composition comprises greater than about 80% $CD31^+34^+CD45^-CD105^+$ $c\text{-}kit^-lin^-$ cells.

6. The composition of claim 1, wherein the composition comprises greater than about 90% $CD31^+34^+CD45^-CD105^+$ $c\text{-}kit^-lin^-$ cells.

7. The composition of claim 1, wherein the composition comprises greater than about 95% $CD31^+34^+CD45^-CD105^+$ $c\text{-}kit^-lin^-$ cells.

8. The composition of claim 1, wherein the composition comprises greater than about 99% $CD31^+34^+CD45^-CD105^+$ $c\text{-}kit^-lin^-$ cells.

9. The composition of claim 5, wherein the $CD31^+34^+CD45^-CD105^+$ $c\text{-}kit^-lin^-$ cells are microvasculature cells.

10. A composition comprising substantially purified $CD31^+34^+CD45^-CD105^+$ $c\text{-}kit^-lin^-$ cells.

11. The composition of claim 10, wherein the cells express Sca-1.

12. The composition of claim 10, wherein the cells are murine cells.

13. The composition of claim 10, wherein the cells are human cells.

14. The composition of claim 10, wherein the $CD31^+34^+CD45^-CD105^+$ c-kit$^-$ lin$^-$ cells are microvasculature cells.

15. A method of preparing a composition comprising a purified population of cells, wherein greater than 50% of the cells are $CD31^+CD34^+CD45^-CD105^+$c-kit$^-$ lin$^-$ cells, comprising

contacting cells of the vasculature with an antibody that specifically binds CD31; and

separating cells that bind the antibody from the vasculature,

thereby isolating a population of cells that are $CD31^+CD34^+CD45^-CD105^+$c-kit$^-lin^-$.

16. The method of claim 15, wherein the cells are murine cells.

17. The method of claim 15, wherein the cells are human cells.

18. The method of claim 15, wherein the microvasculature is the microvasculature of the brain or the lung.

19. The method of claim 15, wherein the $CD31^+CD34^+CD45^-CD105^+$c-kit$^-$ lin$^-$ cells are microvasculature cells.

20. The method of claim 15, wherein the purified population comprises greater than about 80% $CD31^+CD34^+CD45^-CD105^+$c-kit$^-lin^-$ cells.

21. The method of claim 15, wherein the purified population comprises greater than about 90% $CD31^+CD34^+CD45^-CD105^+c\text{-}kit^-lin^-$ cells.

22. The method of claim 15, wherein the purified population comprises greater than about 95% $CD31^+CD34^+CD45^-CD105^+c\text{-}kit^-lin^-$ cells.

23. The method of claim 15, wherein the purified population comprises greater than about 99% $CD31^+CD34^+CD45^-CD105^+c\text{-}kit^-lin^-$ cells.

24. A method of reconstituting hematopoiesis in a subject, comprising administering to the subject a therapeutically effective amount of a composition comprising $CD31^+CD34^+CD45^-CD105^+c\text{-}kit^-lin^-$ cells, thereby reconstituting hematopoiesis.

25. The method of claim 24, wherein the composition comprises autologous cells.

26. The method of claim 24, wherein the composition comprises heterologous cells.

27. The method of claim 24, wherein the subject is a recipient of radiation therapy.

28. The method of claim 24, wherein the subject is a recipient of chemotherapy.

29. The method of claim 24, wherein reconstituting hematopoiesis comprises increasing hemoglobin level.

30. The method of claim 24, wherein reconstituting hematopoiesis comprises increasing platelet count.

31. The method of claim 24, wherein reconstituting hematopoiesis comprises increasing white blood cell count.

32. The method of claim 24, wherein reconstituting hematopoiesis comprises increasing T cell count.

33. The method of claim 24, wherein reconstituting hematopoiesis comprises increasing B cell count.

34. A method of promoting the proliferation or differentiation of a hematopoietic stem cell in a subject, comprising administering to the subject a therapeutically effective amount of the composition of claim 1, thereby promoting the proliferation or survival of the hematopoietic stem cell.

35. The method of claim 34, wherein the hematopoietic stem cell is autologous.

36. The method of claim 34, wherein the hematopoietic stem cell is heterologous.

37. The method of claim 34, wherein the subject is a human subject.

38. The method of claim 24, wherein the subject is exposed to radiation.

39. A pharmaceutical composition comprising a therapeutically effective amount of the composition of claim 1 in a pharmaceutically acceptable medium.

40. A kit for reconstituting hematopoiesis, comprising a container comprising the composition of claim 1 and instructions for administering the composition of claim 1.

41. An isolated cell that promotes hematopoietic stem cell survival, wherein the cell expresses CD31, CD34 and CD105, but does not express c-kit or a hematopoietic lineage specific marker.

42. The isolated cell of claim 41, wherein the cell expresses von Willebrand factor, Flk-t or Tie-2.

43. The isolated cell of claim 41, wherein the cell does not express B-H1 or mB-1.

44. The isolated cell of claim 41, wherein the hematopoietic lineage specific marker is B220, Mac-1, CD3, CD5, NK1.1, CD4, CD8 and CD45.

45. An isolated $lin^-CD31^+CD34^+CD45^-CD105^+c\text{-}kit^-Sca\text{-}1^+$ cell.

46. The isolated cells of claim 45, wherein the cell is a cell of the mircovasculature.

47. A method for promoting proliferation or differentiation of a hematopoietic stem comprising co-culturing the hematopoietic stem cell with a $CD31^+CD34^+CD45^-CD105^+lin^-$ c-kit^- cell.

48. A cell isolated by the method of claim 15.